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Project Summary

Pollution Prevention Assessment U.S. Postal Service Stamp Distribution Network Kansas City, MO

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As part of its Waste Reduction Evaluation at Federal Sites Program, the U.S. Environmental Protection Agency (EPA) National Risk Management Research Laboratory worked cooperatively with the U.S. Postal Service (USPS) to integrate waste prevention and recycling activities into the waste management programs at various postal facilities through the conduct of pollution prevention opportunity assessments (PPOAs). The PPOA summarized here was conducted at a USPS Stamp distribution Network facility in Kansas City, MO.

The report makes recommendations concerning the procurement of office supplies, maintenance supplies, and hazardous materials; management of hazardous materials and wastes; purchase of chemicals on EPA's 33/50 list; improvement of source separation and recycling of paper and paper products, metals, and plastics; management of unwanted equipment; and other options for reducing or eliminating pollution.

This Project Summary was developed by EPA's National Risk Management Research Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Since 1988, EPA's National Risk Management Research Laboratory (NRMRL) has managed a technical support effort known as the Waste Reduction Evaluations at Federal Sites (WREAFS) Program. WREAFS was established to provide pollution prevention solutions to environmental issues through research, development, and demonstration of pollution prevention techniques and technologies, and transferring lessons learned within the federal community and related private sector industries.

The U.S. Postal Service (USPS), in cooperation with NRMRL's WREAFS Program is engaged in an effort to integrate pollution prevention and recycling activities into the waste management programs at postal facilities. The purpose of this project was to perform pollution prevention opportunity assessments (PPOAs) at Postal Service facilities, recommend implementation strategies, and develop facility guidance that can be incorporated into a revision of the USPS *Waste Reduction Guide*. The project was funded by the USPS through an interagency agreement with EPA NRMRL.

In this report, the findings of the PPOA conducted for the USPS Stamp Distribution Network located in Kansas City, MO are described. The PPOA was conducted during the week of March 6, 1995.

Facility Description

The Stamp Distribution Network (SDN) is located in the Hunt Midwest Subtropolis in North Kansas City. Subtropolis is the world's largest underground business complex, housing more than 60 local, national, and international businesses in more than 10 million square feet of developed space located 100 feet underground.

The USPS site contains two operations: the SDN and the National Stamp Depository (NSD). The mission of the SDN is the

distribution of stamps and stamped products, such as postcards, food stamps and money orders, to more than 4,000 post offices in Iowa, Missouri, Kansas and Illinois.

The NSD consists of two underground warehouses which are used primarily to store stamps and other products. The NSD supplies stamps to six Accountable Paper Depositories (Memphis, Chicago, Denver, New York, Washington, and San Francisco) which distribute them to Stamp Distribution Offices.

Waste Description

Exhibit 1 provides a summary of the primary SDN waste streams, current management practices, and pollution prevention options.

Pollution Prevention Opportunities

Exhibit 2 presents the pollution prevention opportunities that offer the USPS significant cost reductions in addition to reducing pollution. The primary pollution prevention opportunities identified by the PPOA are addressed in the sections below.

Packaging Material

Due to the value of stamps, the USPS has developed strict packaging and labeling requirements for shipping stamps. The SDN purchases thousands of single use corrugated boxes to ship stamps to post offices. Once the shipments from the SDN are received at their final destination, the packages become waste. The USPS incurs additional costs for the labor to unpack and manage the boxes as well as the costs associated with their ultimate recycling or disposal. Recommendations for reducing packaging wastes include

- Develop a policy that minimizes the packaging of the product yet maintains security.
- Determine the cost/benefit of replacing single use corrugated boxes in certain USPS shipping operations with distribution packaging that can be reused hundreds of times.
- Establish a closed loop network for stamp distribution packaging. The stamps are distributed within a confined geographic area (Missouri, Kansas, Iowa, and Illinois); therefore, the SDN should be able to establish a closed loop system for returning stamp packaging to the SDN for reuse.

Mixed Paper

A significant portion of the mixed paper is due to the stamp requisition system. Recommendations for reducing mixed-paper wastes are

- Develop and implement an electronic ordering system on a larger scale. An electric ordering system would simplify the ordering process, eliminate the need to key in information from the order forms, increase the efficiency of the SDN, and reduce the amount of paper waste generated at the facility. Since many small post offices do not have computers, the electronic system could consist of a telephone voice recognition system.
- Establish a recycling program for paper and other recyclables. Recycling efforts could be coordinated with other postal facilities in the Subtropolis, complex-wide through Hunt Midwest, or with the Kansas City Processing and Distribution Facility.

Stamps

The USPS is currently investigating a process to shred obsolete or damaged stamps (and packaging materials) and use the resulting material for landscape mulch. This process currently is being tested and appears to be acceptable to the Postal Inspection Service.

Pallets

- Return U.S. Government Printing Office (GPO) pallets, including broken pallets, to source (pallets and skids can be returned to the driver at the time of delivery and GPO will arrange to pick up loads of 300 or more pallets that have been accumulated).
- Require use of USPS pallets on stamp deliveries from private printers.
  In future contracts for printing of stamps, require the stamps be delivered on USPS pallets. This would allow the reuse of the pallets and reduce the quantity of pallets discarded.
- Investigate mulching of pallets with stamps destined for destruction.
- Investigate the feasibility of sending pine pallets to the mulch manufacturer with stamps destined for destruction.

Fluorescent Lighting

- Establish a recycling program.
- Ship expired bulbs to an approved facility for recycling of glass, metals, and mercury.

Lighting

Based on information provided by the SDN staff, the USPS facility in Kansas

Exhibit 1. *SDN Solid Waste Generation*

Waste	*Current Management*	*Opportunities*
Obsolete, damaged or defective equipment	*Disposed*	*Reduce generation, send to CRF, send to computer recyclers*
Corrugated cardboard	*Some reused, most recycled*	*Reduce incoming boxes, reuse boxes, improve diversion for recycling*
Computer printout	*Discarded as waste*	*Reduce generation, divert for recycling*
White paper	*Discarded as waste*	*Reduce generation, divert for recycling*
Mixed paper	*Discarded as waste*	*Reduce generation, divert for recycling*
Magazines	*Discarded as waste*	*Reduce generation, divert for recycling*
Toner cartridges	*Returned for recycling*	*Continue recycling*
Pallets	*Some reused, many discarded as waste*	*Reduce variety, reuse, establish recycling options*
Plastic stretch wrap	*Discarded as waste*	*Reduce generation, divert for recycling*
Strapping	*Discarded as waste*	*Divert for recycling*
Dunnage	*Discarded as waste*	*Reuse, divert for recycling*
Fluorescent tubes	*Discarded as waste*	*Divert for recycling*
Filters	*Discarded as waste*	*Procure more efficient filtering system*

Exhibit 2. *Potential Cost-Saving Pollution Prevention Opportunities*

Item(s) of Concern	*Current Practice*	*Pollution Prevention Opportunity*	*Potential Estimated Savings/Revenues**
Packaging Materials	*Cardboard is reused or recycled; other packaging material is disposed as solid waste*	*Review stamp packaging requirements for stamp producers*	*Potential savings for avoided waste disposal costs and raw material purchases*
		Establish closed loop network for reusable packaging	
Mixed Paper	*Disposed as solid waste*	*Establish an electronic ordering system for stamps*	*Eliminate costs associated with paper disposal*
		Establish a recycling program for mixed paper	*Potential savings for avoided waste disposal costs and possible revenue from recycling*
Stamps	*Transported to incinerator in Indiana*	*Shred stamps and packaging materials for use as landscape mulch*	*Eliminate costs for transportation, incineration, and labor*

** Dollar figure associated with potential savings is unknown at this time.*

City pays more than $89,000 for electricity per year. This expense breaks down as follows: SDN $72,096.94 and NSD $17,054.90. Pollution prevention options include

- Install motion sensitive lighting in warehouses and other infrequently used areas.
- Establish a policy of turning off lights and equipment when leaving an area.
- Reduce the number of emergency lights and rewire the lighting in the warehouses.
- Install energy efficient lighting.
- Become a Federal Partner in the Green Lights Program.

Indoor Air Quality

The location of the USPS SDN and NSD facilities in an underground, active limestone and shale mine raises questions regarding the indoor air quality of the space. Observation reveals that the USPS has all the potential chemical release sources of typical office space (hydrocarbons from computers, printers, and other electrical equipment; hydrocarbons from carpet glues and upholstery, etc.) as well as diesel exhaust from mining equipment, trucks, and other vehicles. The USPS also utilizes fork lifts, which may affect the air quality or present explosion hazards, depending on the type of lift and battery charging procedures. Given the unusual office ventilation configuration (the only entry point for outside air is one mile away), the potential for poor air quality exists, and options should be considered for reducing such air pollution.

Conclusions and Recommendations

The USPS has encouraged reduction and recycling activities in its facilities. By implementing many of the source reduction and recycling options identified in the assessment, the SDN may be able to reduce both the quantity and toxicity of the wastes generated by this facility and potentially save money in waste disposal costs. Finding an alternative means of managing obsolete or defective stamps (e.g., composting) and identifying alternative means of packaging distributed stamps are important steps in pollution prevention at this facility. In addition, the facility should focus on implementing a comprehensive paper recycling program and address indoor air quality issues.

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***James S. Bridges and N. Theresa Hoagland** are the EPA Project Officers (see below).*
The complete report, entitled "Pollution Prevention Assessment, U.S. Postal Service Stamp Distribution Network Kansas City, MO," (Order No. PB97-100036; Cost: $25.00, subject to change) will be available only from
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